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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/743,199

12/22/2003

Pradeep Vijayan

132146

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7590

12/30/2005

GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER

DUDA, RINA I

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/743,199

Applicant(s)

VIJAYAN ET AL.

Examiner

Rina I. Duda

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/16/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Makaran (US Patent 5744921).

Claim 1, Makaran teaches a method for controlling a brushless DC motor comprising a start-up routine for initiating the motor, activating/deactivating a plurality of driving switches in order to control voltage supply to the motor, wherein the activating/deactivating step occurs after a predetermined time delay (see column 9 lines 36-40) which is used to check the speed setpoint, the power supply voltage, and the direction of rotation.

Claim 2, Makaran uses optical/magnetic sensors for producing sensor signal based on the polarity of the rotor.

Claim 3, Makaran describes in column 5 lines 35-44 that the motor controller 110 control commutation (ON/OFF) of the motor using the information from the position sensor.

Claims 4, 10, and 12, Makaran describes using PWM for controlling the variable speed of the motor, see column 6 lines 37-40.

Claim 5, Makaran describes in column 6 lines 37-59 that the duty cycle (ON/OFF) is determined based on the desired motor speed.

Claims 6 and 13, Makaran describes in column 5 and column 7 how the system uses digital and analog variables.

Claims 7 and 14, Makaran describes an operating speed between 200 to 5000 rpm.

Claim 8, Makaran teaches a control circuit for a brushless DC motor comprising position sensing means 106 including optical/magnetic sensors for sensing the position of the rotor and a controller 110 for turning the motor driver switches ON and OFF (see figure 12D) based on output from the position sensor (see column 8 lines 27-46).

Claim 9, Makaran describes a commutation circuit 110 using a plurality of switches (MOSFETs) to commutate the motor.

Claim 11, Makaran describes that commutation is defined based on the speed, current, voltage, and position of the motor.

Claim 15, Makaran describes that his invention is used in HVAC systems (see columns 6/9/10) and column 5 describes the use of temperature sensors.

Claim 16, Makaran describes in column 6 lines 20-22 and column 10 lines 1-12 that the speed of the motor depends on the sensed temperature.

Claims 17 and 18, Makaran describes in column 6 using analog and digital potentiometer for controlling the speed (manually/automatically) of the motor (ON/OFF).

Claim 19, Makaran uses commutation (ON/OFF) for controlling the voltage through the motor.

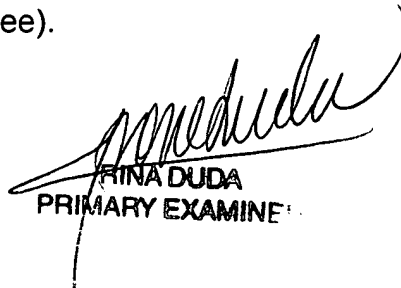
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The documents cited in PTO-892 describe other systems for controlling the voltage through a brushless motor.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rina I. Duda whose telephone number is 571-272-2062.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on 571-272-2107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RD



RINA DUDA
PRIMARY EXAMINER